


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>UKAS TESTING 0002</p> <p>Accredited to ISO/IEC 17025:2017</p>	<p>NPL Management Ltd</p> <p>Issue No: 095 Issue date: 20 August 2024</p>	
	<p>Hampton Road Teddington Middlesex TW11 0LW</p>	<p>Contact: Customer Helpline Tel: +44 (0)20 8943 7070 Fax: +44 (0)20 8614 0482 E-Mail: measurement_services@npl.co.uk quality@npl.co.uk Website: www.npl.co.uk</p>
<p>Testing performed by the Organisation at the locations specified below</p>		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
<p>Address National Physical Laboratory Hampton Road Teddington Middlesex TW11 0LW</p> <p>Local contact Mr Tahir Maqba Customer Services Manager</p> <p>Tel: +44 (0)20 8943 6796 Fax: +44 (0)20 8614 0482 E-Mail: tahir.maqba@npl.co.uk Website: www.npl.co.uk</p>	<p>Support Functions: Quality System Quality Audit Administration</p> <p>Testing: Mechanical, metallurgical, physical and chemical testing</p> <p>Sampling and Testing: Stack Emissions Testing</p>	A

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Customers' premises/sites	Sampling and analysis	B
Customer Sites requiring Stack Emissions Testing	Stack Emissions Testing	C



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ENGINEERING COMPONENTS & TOOLS <i>Service Reference: LD10</i>	<u>Dimensional Tests</u> Length measurement up to 550 x 500 x 450 mm, with following best measurement capability (uncertainty): 1.5+L/260 µm, where L is in mm 0.80 µm (using substitution method) 0.40 µm (using reversal method)	Documented in-house Method QPLM/B/216 Uncertainty may be evaluated by numerical (Monte Carlo) methods.	A
GAS MEASURING EQUIPMENT Continuous Emission Monitoring Systems (CEMS) <i>Service Reference: QE84</i>	Field Tests Lack of fit (linearity) Response time Maintenance interval Long term stability (Zero shift and span change) Reproducibility Availability Contamination check of in-situ Systems Calibration function tests Tests for gaseous monitoring CEMS for CO, CO ₂ , SO ₂ , O ₂ , H ₂ O, N ₂ O, NO and NO ₂	Environment Agency (MCERTS) Performance standards and test procedures for continuous emission monitoring systems. For gaseous systems. EN 15267-3:2007 Documented in-house methods QPAS/B/538, QPAS/B/542 and QPAS/B/555 incorporating the requirements of the above documents	C
Stack Emissions - Continuous Emissions Monitoring Systems (CEMS) <i>Service Reference: QE84</i>	QAL 2, and the Annual Surveillance Test (AST) for CEMS	Documented in house method QPAS/B/542 to meet the requirements of BS EN 14181:2014, Environment Agency MID 14181 (TGN M20 Annex A) and other requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	A, C



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<p>GAS MEASURING EQUIPMENT (cont'd)</p> <p>Stack Emissions - Continuous Emissions Monitoring Systems (CEMS) - Velocity Service Reference: QE84</p>	<p>QAL 2 and the Annual Surveillance Test (AST) for CEMS - Velocity</p>	<p>Documented in-house procedure QPAS/B/542 to meet the requirements of BS EN 16911-2, Environment Agency MID 16911-2 and other requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007</p>	<p>A, C</p>
<p>WORKPLACE AND AMBIENT ATMOSPHERIC POLLUTANTS, AND OTHER GAS SAMPLES</p> <p>Sorbent tubes <i>Service Reference: QE83</i></p> <p>Pumped and diffusive sorbent tubes <i>Service Reference: QE83</i></p>	<p><u>Chemical Tests</u></p> <p>Volatile Organic Compounds in air: iso-butane, n-butane, 1,3 butadiene, iso-pentane, n-pentane, n-hexane, benzene, toluene, m/p-xylene, ethylbenzene, o-xylene.</p> <p>On site Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory Volatile organic compounds: iso-butane, n-butane, 1,3 butadiene, iso-pentane, n-pentane, n-hexane, benzene, toluene, m/p-xylene, ethylbenzene, o-xylene.</p>	<p>Documented in house method QPAS/B/566 using sorbent tubes followed by thermal desorption and GCMS Based on BS-EN ISO 16017-1&2</p> <p>Documented in-house methods QPAS/B/566</p>	<p>A</p> <p>B</p>



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<p>WORKPLACE AND AMBIENT ATMOSPHERIC POLLUTANTS, AND OTHER GAS SAMPLES (cont'd)</p> <p>Weight of suspended particulate matter <i>Service Reference:</i> QE85-8050</p> <p>Cellulose filters Acid digests (nitric acid and hydrogen peroxide) <i>Service Reference:</i> QE17-8010</p> <p>Quartz filters Air particulate samples <i>Service Reference:</i> QE15-OC/EC</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>25 ug to 7 mg equivalent to 1 µg/m³ for a 1 m³/hour sampler to 120 µg/m³ for a 2.3 m³/hour sampler</p> <p>Arsenic Cadmium Chromium Cobalt Copper Iron Lead Manganese Nickel Selenium Vanadium Zinc</p> <p>Total carbon (elemental carbon plus organic carbon) Total carbon up to 100 µg/cm²</p>	<p>Documented in-house method QPAS/B/564 based on BS EN 12341:2014</p> <p>Microwave digestion (for cellulose filters) and inductively coupled plasma - mass spectrometry (ICP-MS) following Documented in-house method QPAS/B/533 based on EN 14902:2005</p> <p>Thermal-optical method - volatilisation and oxidation of carbon-containing PM components, quantification of the carbonaceous gases released</p> <p>Documented in-house method QPAS/B/561, based on CEN/TR 16243 and BS EN 16909:2017</p>	<p>A</p> <p>A</p> <p>A</p>



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<p>WORKPLACE AND AMBIENT ATMOSPHERIC POLLUTANTS, AND OTHER GAS SAMPLES (cont'd)</p> <p>Impurities in hydrogen gas samples <i>Service Reference QE13</i></p>	<p><u>Chemical Tests</u></p> <p>Amount fraction of:</p> <p>Carbon monoxide Carbon dioxide Total hydrocarbons</p> <p>Carbon monoxide Carbon dioxide Nitrogen Oxygen Argon</p> <p>Total sulphur compounds</p> <p>Helium</p> <p>Water</p> <p>Water</p>	<p>Documented in-house methods QPDQM/B/500 and DN34 Method – (Technique)</p> <p>DN34A – GC-FID Methaniser</p> <p>DN34B – GC-PDHID/TCD</p> <p>DN34C – GC-SCD</p> <p>DN34F – GC-TCD</p> <p>DN34G - QCM</p> <p>DN34H - CRDS</p>	



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ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES	<u>Physical Tests</u>	National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard for laboratories carrying out testing of samples from stack emissions monitoring	
Filter Papers and Rinse Solutions <i>Service Reference: QE84</i>	Weighing of Particulate Matter	BS EN 13284-1:2017 (QPAS/B/538)	A
	Weighing of Particulate Matter <10 micron (PM10 and PM2.5)	BS EN ISO 23210:2009 (QPAS/B/563)	
Testing of Stack Emissions to Atmosphere <i>Service Reference: QE84</i>	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory</u>	National, International and other recognised standards using documented in-house methods to meet the requirements of BS EN 15259:2007	
	Ammonia	US EPA Method 26 (QPAS/B/540)	C
	Total Particulate Matter (20 mg/m3 to 1000 mg/m3)	BS ISO 9096:2017 (QPAS/B/536)	C



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Testing of Stack Emissions to Atmosphere <i>Service Reference: QE84 (cont'd)</i>	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory (cont'd)</u>	National, European, International and Environment Agency specified standards including MIDs and documented in-house methods to meet the requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	
	Total Particulate Matter	BS EN 13284-1:2017 (QPAS/B/538)	C
	Particulate Matter <10 micron (PM10 and PM2.5)	BS EN ISO 23210:2009 (QPAS/B/563)	C
	Hydrogen chloride	BS EN 1911:2010 (QPAS/B/540)	C
	Hydrogen fluoride	PD CEN/TS 17340:2020 (QPAS/B/540)	C
	Sulphur dioxide	BS EN 14791:2017 (QPAS/B/540)	C
	Ammonia	BS EN ISO 21877:2019 (QPAS/B/540)	C
	Metals	BS EN 14385:2004 (QPAS/B/537)	C
	Mercury	BS EN 13211:2001 (QPAS/B/537)	C
	Dioxins and Furans	BS EN 1948-1:2006 (QPAS/B/539)	C
	Dioxin-like Polychlorinated Biphenyls (PCBs)	BS EN 1948-4 2010 (QPAS/B/539)	C
	Polycyclic Aromatic Hydrocarbons (PAHs)	BS ISO 11338-1:2003 (QPAS/B/539)	C



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Testing of Stack Emissions to Atmosphere <i>Service Reference:QE84</i> (cont'd)	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory</u> (cont'd)	National, European, International and Environment Agency specified standards including MIDs and documented in-house methods to meet the requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	
	Speciated VOCs: Mercaptans Amines and Amides Phenols Cresols Carboxylic Acids Aldehydes (Direct sampling of dry stacks and dynamic dilution sampling of hot wet stacks)	Extractive sampling onto carbon or other sorbent tubes for analysis by solvent desorption or thermal desorption. PD CEN/TS 13649:2014 (QPAS/B/556)	C
	<u>Sampling and On-Site Analysis</u>		
	Water vapour (gravimetric analysis)	BS EN 14790:2017 (QPAS/B/536)	C
	<u>Sampling and On-Line Analysis</u>		
Pressure, Temperature and Velocity (point velocity method) for: Periodic Compliance Monitoring	BS EN ISO 16911-1:2013 & EA MID 16911-1 (Procedure QPAS/B/567) - using differential pressure device (pitot tube) method Procedure to meet requirements of PD CEN TR 17078:2017 Measurement Objective 1	C	
Carbon dioxide*	PD CEN/TS 17405:2020 (QPAS/B/538 - NDIR analyser)	C	
Carbon monoxide*	BS EN 15058:2017 (QPAS/B/538 - NDIR analyser)	C	

* The scale range of the analyser used for this test must be that detailed on its current MCERTS certificate or a range validated by the organisation to meet MCERTS requirements.



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Testing of Stack Emissions to Atmosphere <i>Service Reference: QE84</i> (cont'd)	<u>Sampling and On-Line Analysis</u> (cont'd)	National, European, International and Environment Agency specified standards including MIDs and documented in-house work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007	
	Oxides of nitrogen*	BS EN 14792:2017 (QPAS/B/538 - Chemiluminescence analyser)	C
	Sulphur dioxide*	PD CEN/TS 17021:2017 (QPAS/B/539 - NDIR analyser)	C
	Nitrous oxide (N ₂ O)*	BS EN ISO 21258:2010 (QPAS/B/564 - NDIR analyser)	C
	Oxygen*	BS EN 14789:2017 (QPAS/B/538 - Validated paramagnetic analyser) (QPAS/B/538 - Validated zirconium cell analyser) (QPAS/B/538 - Validated electrochemical cell analyser)	C
	Total Gaseous Organic Carbon* (TOC / VOC) (0 to 1000 mg/m ³)	BS EN 12619:2013 (QPAS/B/538 - FID analyser)	C
	<u>Sampling and On-Line Analysis</u> Sampling and on-line analysis of gas phase chemicals from stacks, ducts and flues, including: sulphur dioxide* hydrogen chloride* water vapour* ammonia* methane*	PD CEN/TS 17337:2019: (QPAS/B/541 – Validated FTIR analyser) Measuring stack gas emissions using FTIR Instruments and traceable reference standards.	A, C

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Testing of Stack Emissions to Atmosphere <i>Service Reference: QE84 (cont'd)</i>	<u>Sampling and On-Site Analysis</u> Pressure, Temperature and Velocity (point velocity method) for: <ul style="list-style-type: none"> • Periodic Compliance Monitoring • Calibration of Continuous AMS • To meet requirements of Emissions Trading Schemes 	National, European, International and Environment Agency specified standards and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and BS EN 15259:2007 BS EN ISO 16911-1:2013 (Procedure QPAS/B/567) - using differential pressure device (pitot tube) method Procedure to meet requirements of PD CEN TR 17078:2017 Measurement Objectives 1, 2 and 3	C
NEUTRON DOSE EQUIVALENT Fast neutron personal dosimeter proficiency testing <i>Service Reference: RN04</i>	Energy: broad range Radionuclide sources Dose equivalent rates: ²⁴¹ Am-Be: (1 to 400) $\mu\text{Sv h}^{-1}$ at 1m from the source ²⁵² Cf: 2 $\mu\text{Sv.h}^{-1}$ to 3 mSv.h^{-1} at 1 m from the source	In accordance with HSE Measurement Protocol for Performance Testing of Dosimetry Services for External, Whole Body Fast Neutron Radiation, Actual dose equivalent rate depends on particular source up to date emission rate. Available upon request.	A



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<p>STANDARDS OF RADIOACTIVITY</p> <p>Solutions of ³H standards for ³H measurement performance test <i>Service Reference: RR06</i></p>	<p>Activity per unit mass of ³H, Bq g⁻¹ 10 Bq g⁻¹ to 1 kBq g⁻¹</p>	<p>In accordance with HSE Measurement Protocol for Performance Testing of the Determination of Tritium in Water (1997)</p> <p>Procedures directly supporting this work are:</p> <p>RMS012 - Production of Samples for the Tritium PTE RMS013 - Data Analysis of the Tritium Performance Test</p>	A
<p>RADIOACTIVITY METROLOGY</p> <p>RR/1201 - Testing of impurity content of radionuclide solutions by high resolution gamma spectrometry (activity in Bq) <i>Service Reference: RR12</i></p>	<p>0.5 Bq to 100 kBq</p> <p>Energy range (60 to 1100) keV/ 2.5 % Expanded Measurement Uncertainty</p> <p>Energy range (1100 to 1500) keV/ 10 % Expanded Measurement Uncertainty</p>	<p>Procedures directly supporting this work are:</p> <p>RQC003 – Quality Control of the NMG gamma-ray spectrometers RMS003 - Customer Impurity checks RMT006 - Measurement of a Gamma Spectrometry Sample RMT007 - Analysis of a Gamma Spectrometry Sample</p>	A
END			